

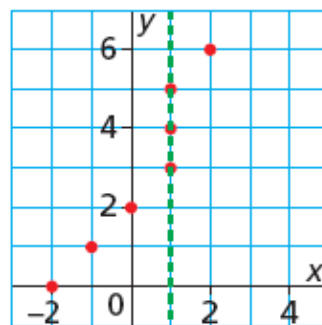
3.5 Graphs of Relations and Functions

Recall:

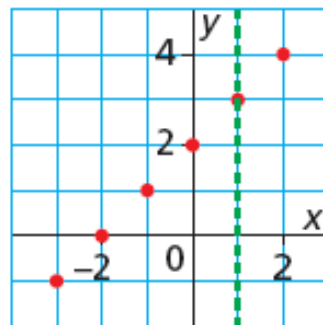
- A function (only one output value) is always a relation.
- A relation is not always a function.

Vertical Line Test for a Function

A relation that is not a function has two or more ordered pairs with the same first coordinate (x value). So, when the ordered pairs of the relation are plotted on a grid, a vertical line can be drawn to pass through more than one point.

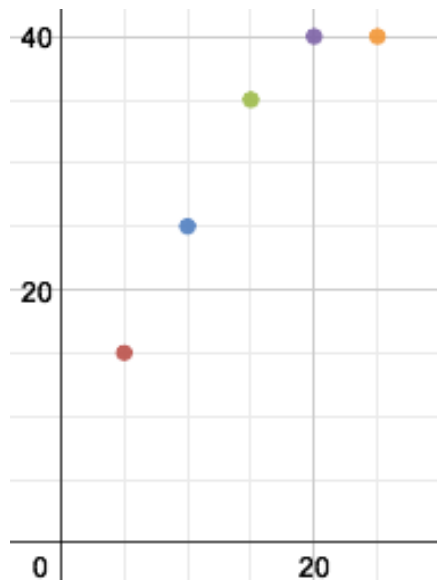


A function has ordered pairs with different first coordinates (x value). So, when the ordered pairs of the function are plotted on a grid, any vertical line drawn will always pass through no more than one point.

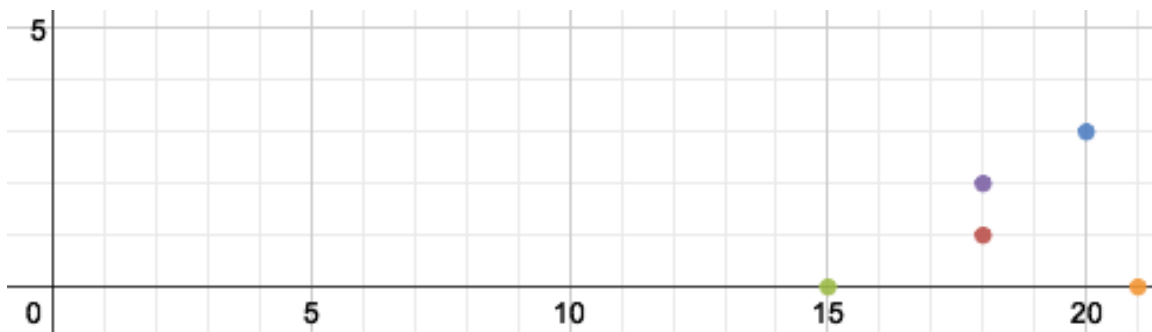


Example 1: Identify the Graph of a Function

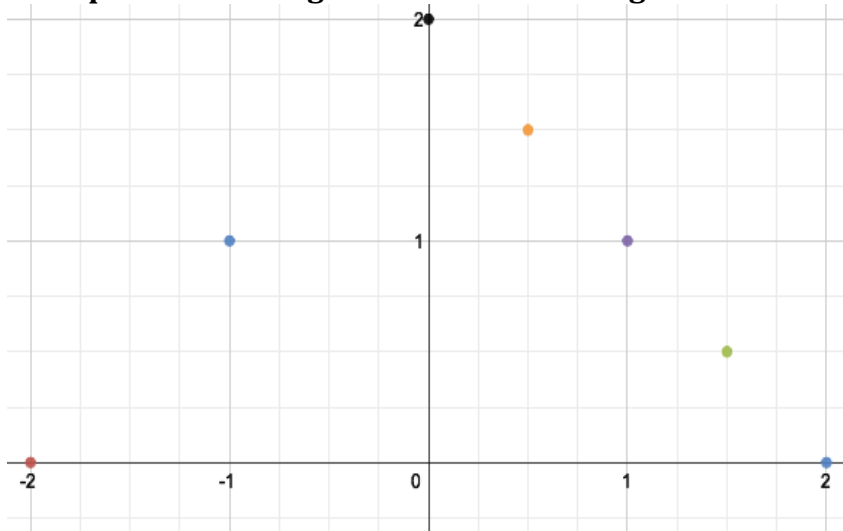
a) the cost of admission to the circus for a group of people versus the number of people in the group



b) The number of siblings that my friends have versus my friend's age.

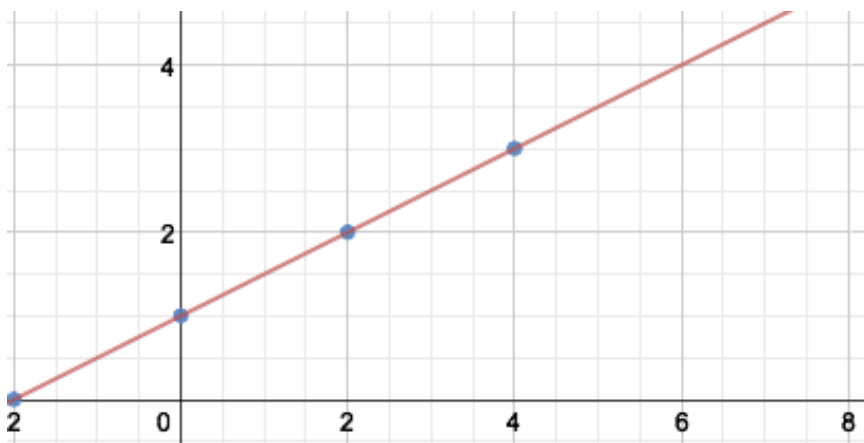


Example 2: Revisiting the Domain and Range of a Function



Domain:

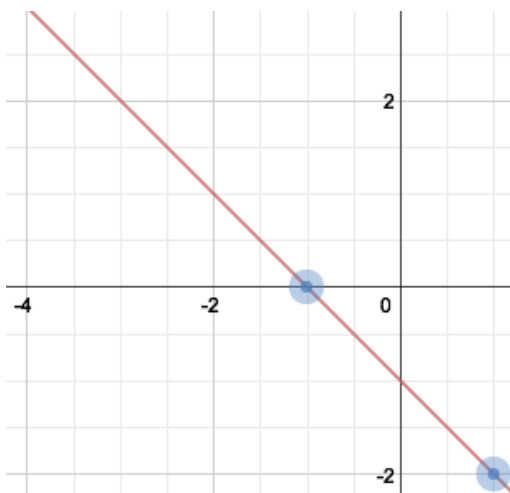
Range:



Domain:

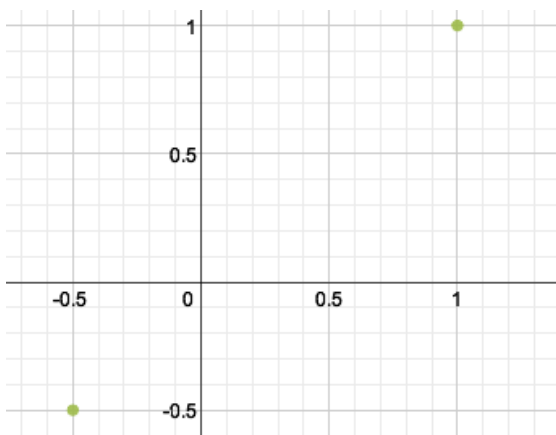
Range:

Try these on your own!



Domain:

Range:



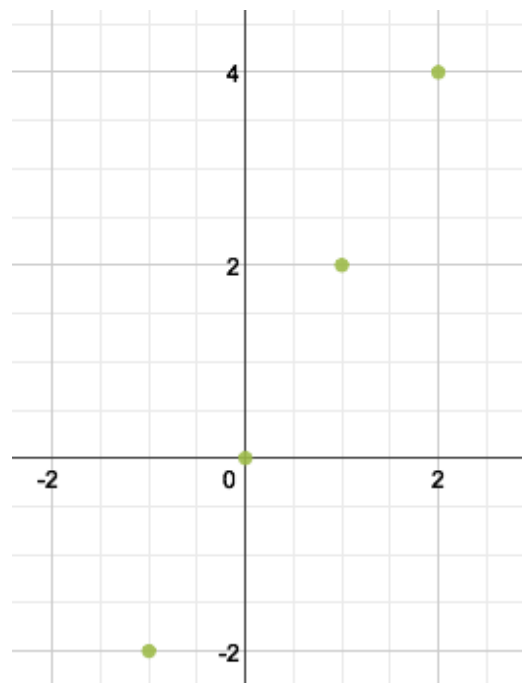
Domain:

Range:

Example 3: Finding Values from the Graph of the Function

Given the graph of the function $y=f(x)$:

- Find the y-value when the x value is 1
- Find the domain value when the range value is -1

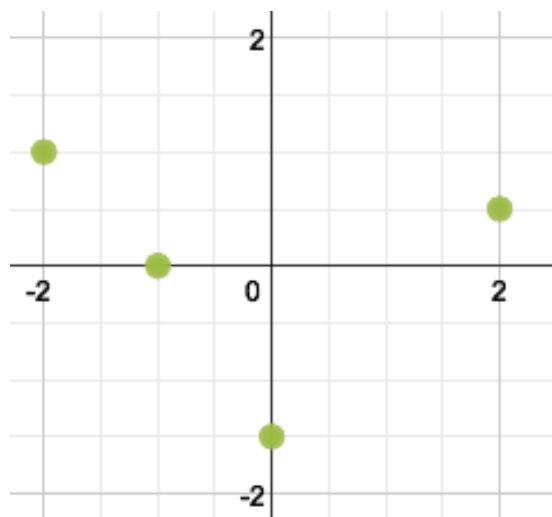


Now you Try!

Given the graph of the function $y=g(x)$.

- a) Find the y-value when the x-value is 2.

- b) Find the domain value when the range value is 3.



Practice

Pg 294

3, 4, 6, 7, 8, 9, 19